

Mineral Industry Surveys

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MOLYBDENUM IN SEPTEMBER 2004

Domestic production of molybdenum in concentrate in September 2004 was about 25% less than that of the previous month and was about 14% more than that of September 2003, according to the U.S. Geological Survey. Year-to-date production of molybdenum in concentrate from January through September was 17% more than during the same period in 2003. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 4,730 metric tons (t) at the beginning of 2004 and 4,680 t at the end of September.

According to Ryan's Notes (2004b), the September monthly average prices for U.S. ferromolybdenum (FeMo) ranged from \$21.250 to \$23.125 per pound of molybdenum content, compared with \$19.389 to \$21.333 in August. European FeMo monthly averages ranged from \$47.000 to \$48.563 per kilogram of molybdenum content in September as compared with \$45.444 to \$47.333 in August. In September, worldwide molybdenum oxide prices ranged from \$17.844 to \$18.431 per pound versus \$17.244 to \$17.933 in August.

Molybdenum traders reportedly stated that prices firmed the last week in September but that consumer business was moderate. Molybdenum supply was limited, and the shutdown of small Chinese mines for environmental violations restricted the amount of molybdenum material available for export. Traders reported consumer ferromolybdenum prices from \$46.50 to over \$50 per kilogram. The wide range represented the difference between spot and forward prices. Further upward pressure on prices was possible if heavy winter rains disrupted tailing pond operations at Jinduicheng Molybdenum Mining Corp. (Ryan's Notes, 2004a).

Golden Phoenix Minerals, Inc., signed the final molybdenum marketing agreement, with UK-based trading company Derek Raphael & Co. (DRC), for its Ashdown project in Nevada. Under the exclusive life-of-mine contract, DRC was to purchase the molybdenum concentrate, take delivery at the mine, and be

responsible for placing it with buyers. Golden Phoenix reported a water pollution control and reclamation permit had been submitted to the Nevada Department of Environmental Protection. The permit application stipulated that about 9,100 t of stockpiled material would be processed in an existing pilot mill to determine flow sheet design for a production mill. Once the permit is approved, Golden Phoenix would build an access road and begin mill construction (Platts Metals Week, 2004b).

Canada's Roca Mines Inc. announced plans to study two development scenarios for its MAX molybdenum project in southeastern British Columbia, following completion of a resource estimate for the project. Roca planned studies of a fast-track mining and milling operation based on an estimated measured resource of 1.01 million metric tons (Mt) grading 1.01% molybdenite at a 0.50% cutoff. The company also planned to study a large-scale mining and milling option that would process 2,000 to 3,000 metric tons per day of ore from a 9.34-Mt resource grading 0.35% molybdenite at a 0.20% cutoff (Platts Metals Week, 2004a).

Included in this Mineral Industry Surveys are U.S. production and shipments of molybdenum concentrates and materials, U.S. consumption by end use, stocks of molybdenum material in August and September 2004, and trade data for July and August 2004.

References Cited

- Platts Metals Week, 2004a, Canadian moly project studied: Platts Metals Week, v. 75, no. 39, September 27, p. 8.
Platts Metals Week, 2004b, Golden Phoenix signs moly marketing deal: Platts Metals Week, v. 75, no. 38, September 20, p. 6.
Ryan's Notes, 2004a, Ferroalloy notes: Ryan's Notes, v. 10, no. 39, September 27, p. 4.
Ryan's Notes, 2004b, [untitled]: Ryan's Notes, v. 10, no. 40, October 4, p. 4.

TABLE 1
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS¹

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December ^r	August	September	
Production	33,500	4,350	3,280	30,000
Shipments: ²				
Domestic	25,900	2,600	2,810	22,700
Export	7,660	1,080	635	7,350

^rRevised.

¹Data are rounded to no more than three significant digits.

²As reported by producers.

TABLE 2
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM PRODUCTS¹

(Metric tons, contained molybdenum)

	2003	2004		Year to date
	January-December	August ^r	September	
Gross production	41,400	6,030	6,670	47,500
Internal consumption ²	29,600	3,640	4,320	29,900
Gross shipments	30,100	3,860	3,770	29,000

^rRevised.

¹Data are rounded to no more than three significant digits.

²Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS¹

(Kilograms, contained molybdenum)

End use	Molybdc oxides	Ferro molyb- denum ²	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2004, August:						
Steel:						
Carbon	18,000	W	--	--	W	18,000
High-strength low-alloy	30,500	13,800	--	--	11,300	55,600
Stainless and heat-resisting	226,000	70,700	--	W	6,780	303,000
Full alloy	132,000	128,000	--	--	1,510	261,000
Tool	57,900	W	--	--	--	57,900
Total	464,000	213,000	--	W	19,600	696,000
Cast irons (gray, malleable, and ductile iron)	W	8,650	--	--	763	9,410
Superalloys	58,000	W	--	(3)	107,000	165,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	193	3,240	--	--	20	3,460
Mill products made from metal powder ⁴	--	--	--	--	126,000 ^r	126,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,320	1,320
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	15,300	15,300
Other	1,090	34,000 ^r	74,600	16	16,800	126,000
Grand total	600,000	258,000	74,600	16	287,000 ^r	1,220,000
Stocks, August 31, 2004	403,000	242,000	3,060	27,200	847,000	1,520,000
2004, September:						
Steel:						
Carbon	28,100	W	--	--	W	28,100
High-strength low-alloy	35,900	11,500	--	--	11,300	58,700
Stainless and heat-resisting	202,000	65,100	--	W	6,780	274,000
Full alloy	125,000	175,000	--	--	1,510	301,000
Tool	59,700	W	--	--	--	59,700
Total	451,000	251,000	--	W	19,600	722,000
Cast irons (gray, malleable, and ductile iron)	W	9,010	--	--	763	9,780
Superalloys	87,700	W	--	(3)	111,000	198,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	88	4,420	--	--	20	4,530
Mill products made from metal powder ⁴	--	--	--	--	140,000	140,000
Cemented carbides and related products ⁵	--	--	--	--	W	W
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,320	1,320
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	14,500	14,500
Other	1,090	43,600	79,300	16	16,800	141,000
Grand total	617,000	308,000	79,300	16	303,000	1,310,000
Stocks, September 30, 2004	453,000	241,000	4,820	21,500	859,000	1,580,000

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes calcium molybdate.

³Included in "Other" of the "Superalloys" category.

⁴Includes ingot, wire, rod, and sheet.

⁵Includes construction, mining, oil and gas, metalworking machinery.

TABLE 4
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES
(including roasted concentrate), BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2003	2004		Year to date
	January-December	July	August	
Australia	102,000	--	--	19,000
Austria	--	267,000	124,000	812,000
Belgium	3,190,000	811,000	896,000	4,340,000
Brazil	42,600	590	7,300	19,200
Canada	910,000	122,000	229,000	958,000
Chile	368,000	312,000	--	1,380,000
China	82,600	36,000	--	36,000
Costa Rica	22,500	--	3,430	24,700
India	44,300	--	--	--
Italy	20,300	--	--	--
Japan	2,000,000	1,460,000	1,350,000	4,490,000
Korea, Republic of	61,400	25,200	3,260	79,700
Mexico	3,730,000	242,000	929,000	2,160,000
Netherlands	10,900,000	2,200,000	1,510,000	9,390,000
Sweden	25,700	--	--	--
Taiwan	9,590	590	1,230	12,900
United Kingdom	7,880,000	495,000	989,000	5,680,000
Other	137,000	449,000	339,000	1,730,000
Total	29,500,000	6,430,000	6,380,000	31,100,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY¹

(Kilograms, contained molybdenum)

Country	2003	2004		Year to date
	January-December	July	August	
Australia	873	--	--	1,090
Canada	547,000	99,700	46,100	665,000
Denmark	241	--	--	--
Japan	61	--	--	--
Mexico	43,100	13,800	654	33,700
Netherlands	25,500	--	--	--
United Kingdom	--	--	--	491
Total	617,000	113,000	46,800	701,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS¹

(Kilograms, unless otherwise specified)

Material	January-December 2003			August 2004		
	Gross weight	Contained molybdenum	Value (c.i.f.) ² (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) ² (thousands)
Ore and concentrates roasted	6,310,000	3,960,000	\$41,900	504,000	320,000	\$9,930
Ore and concentrates other	2,870,000	1,230,000	9,580	639,000	320,000	10,300
Molybdenum chemicals:						
Oxides and hydroxides	1,300,000	NA	9,780	39,100	NA	638
Molydates of ammonium	1,620,000	937,000	11,600	20,000	11,200	149
Molydates (all others)	324,000	145,000	1,200	690	500	16
Molybdenum orange	987,000	NA	4,440	81,300	NA	373
Ferromolybdenum	5,740,000	3,690,000	38,200	943,000	620,000	17,700
Molybdenum powders	57,000	43,100	2,000	7,370	6,740	419
Molybdenum unwrought	139,000	136,000	1,700	19,700	19,600	657
Molybdenum waste and scrap	425,000	388,000	5,000	85,300	73,800	2,650
Molybdenum wire	10,600	NA	776	1,060	NA	115
Molybdenum other	79,900	NA	6,420	13,800	NA	1,990
Total	19,900,000	10,500,000	133,000	2,350,000	1,370,000	44,900

NA Not available.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Cost, insurance, and freight at U.S. ports.

Source: U.S. Census Bureau.